IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:
Mingliang L. Tsai

Docket: H0001805 (4300)

Serial Number: 09/800,749

Group Art Unit: 1772

Filed: March 7, 2001

Examiner: Sandra M. Nolan

For: OXYGEN SCAVENGING POLYMER COMPOSITIONS CONTAINING ETHYLENE VINYL ALCOHOL COPOLYMERS

NOTICE: THIS APPLICATION IS UNDER FINAL REJECTION

RESPONSE TO OFFICE ACTION
(CORRECTED)

Commissioner For Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In response to the Office Action mailed April 29, 2003, please consider the following remarks:

Claims 1, 4-9, 11-17, 1-22, 24, 26-44 and 46-50 stand rejected under 35 U.S.C. 103 (a) as being obvious over Laplante (U.S. 2002/0002238A1) in view of Little, et al (U.S. 6,074,717). It is respectfully submitted that the rejection is not well taken. In its broadest context, the inventions provides an oxygen-scavenging polymer composition consisting essentially of:

a) at least one ethylene vinyl alcohol copolymer;

b) at least one oxidizable epoxy or anhydride functional polybutadiene; and

c) at least one metal salt catalyst.

Laplante, et al certainly show ethylene vinyl alcohol oxygen barrier polymers and a metal salt catalyst. However, they do not show an epoxy functionalized polybutadiene nor an anhydride functional polybutadiene. The examiner attempts to overcome this deficiency by citing Little, et al. Little, et al certainly show the existence of a polybutadiene-maleic anhydride adduct resin, however such is in a completely different context. Little, et al have nothing whatsoever to do with ethylene vinyl alcohol copolymers nor metal salt catalysts. In fact, Little, et al do not even mention ethylene vinyl alcohol copolymers or metal salt catalysts anywhere in their disclosure. There is no suggestion from either reference that they could or should be combined in order to find the instant invention. While Laplante, et al show ethylene vinyl alcohol oxygen barrier polymers and a metal salt catalyst, there is no suggestion from the art that the polybutadiene-maleic anhydride adduct resin from Little, et al could or should be combined in the composition of Laplante, et al. There is nothing to suggest that polybutadiene-maleic anhydride adduct resin would be compatible with a ethylene vinyl alcohol oxygen barrier polymers and a metal salt catalyst. There is nothing to suggest that any benefit would emerge from a combination of an ethylene vinyl alcohol oxygen polymer, a metal salt catalyst and a polybutadiene-maleic anhydride adduct resin. The examiner points to an alleged motivation at column 1, lines 48-50 of Little, et al, however, this section only states " It is therefore seen that there is a need for a flexible hose incorporating an aluminum barrier layer, and able to resist delamination in a heating system environment." There is nothing here to motivate one skilled in the art to form an overall composition comprising a ethylene vinyl alcohol copolymer; an oxidizable epoxy or anhydride functional polybutadiene; and a metal salt catalyst. While it might be desirable in Little's context to make useful articles that resist delamination, this is not the type of motivation required by 35 U.S.C. 103. The motivation required would be to find a combination comprising a ethylene vinyl alcohol copolymer; an oxidizable epoxy or anhydride functional polybutadiene; and a metal salt catalyst. This combination is utterly devoid from any

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combination of the applied references. There is simply nothing therein to suggest that they should be combined. It is submitted that the examiner is reconstructing the art in light of applicant's disclosure.

Appellants submit that the Examiner is looking beyond the teachings of the references. A reference has to offer sufficient motivation for one skilled in the art to achieve the desired result. In the instant case, the motives in the references, as disclosed by the practices therein, are quite different from those in the instant invention. The present invention, therefore, is not made obvious by the combination the Examiner has suggested, and the 35 U.S.C. 103 rejection should, therefore, be withdrawn. "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." In re Geiger, 2 U.S.P.Q.2d 1276, 1278 (CAFC 1987). There is no motivation to combine that with the other references to arrive at the instant invention. The Examiner appears to be going to great lengths to locate and try to interrelate the references, but no matter how one applies or combines these references they do not teach using the specific combination of components to attained the demonstrated benefits. The invention cannot be deemed unpatentable merely because, in a hindsight attempt to reconstruct the invention, one can find elements of it in the art; it must be shown that the invention as a whole was obvious at the time the invention was made without knowledge of the claimed invention. 35 U.S.C. 103. When selective combination of prior art references is needed to make an invention seem obvious, there must be something in the art to suggest that particular combination other than hindsight gleaned from the invention itself, something to suggest the desirability of the combination. Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 U.S.P.Q.2d 1434, 1438 (CAFC 1988). Such a suggestion is absent in the cited references. For these reasons it is requested that this ground of rejection be withdrawn.

Claim 10 stands rejected under 35 U.S.C. 103 (a) as being obvious over Laplante (U.S. 2002/0002238A1) in view of Little, et al (U.S. 6,074,717) as applied above an further in view of applicant's alleged admission at page 3 of the specification. It is respectfully submitted that this ground of rejection is not well taken. The arguments over Laplante, et al and Little, et al apply equally here and are repeated from above. Applicant makes no such admission on page 3 of the specification. This portion of the specification does nothing more than to indicate that techniques are known to provide a modified EVOH to make it retortable. Even in these examples where retortable EVOH remains clear after retort, such retortable EVOH still exhibits moisture sensitivity as well as retort shock, in which the moisture is trapped in EVOH layer and thus worsens the oxygen barrier. There is nothing in the applied art which indicates that such retortable EVOH is in any way compatible with an oxidizable epoxy or anhydride functional polybutadiene and a metal salt catalyst. While retortable EVOH may be known in the art, there is simply nothing in Laplante, et al and Little, et al combined with the mere existence of retortable EVOH to teach or suggest an oxygen-scavenging polymer composition that consists essentially of at least one retortable ethylene vinyl alcohol copolymer, at least one epoxy or anhydride functional polybutadiene and at least one metal salt catalyst. The examiner alleges that the citations are analogous because they both deal with EVOH. This is incorrect. The examiner is asked to point to the specific column and line numbers of Little, et al where EVOH is even mentioned. For these reasons it is submitted that the rejection should be withdrawn.

Claims 18, 23, 25 and 45 stand rejected under 35 U.S.C. 103 (a) as being obvious over Laplante (U.S. 2002/0002238A1) in view of Little, et al (U.S. 6,074,717) as applied above an further in view of Tai et al. (EPO 1033080 A2). It is respectfully submitted that the rejection is not well taken. It is respectfully submitted that this ground of rejection is not well taken. The arguments over Laplante, et al and Little, et al apply equally here and are repeated from above. Laplante, et al show ethylene vinyl alcohol oxygen barrier polymers and a metal salt catalyst. However, they do not show an epoxy functionalized polybutadiene nor an anhydride functional polybutadiene. Little, et al show the existence

of a polybutadiene-maleic anhydride adduct resin, however Little, et al have nothing whatsoever to do with ethylene vinyl alcohol copolymers nor metal salt catalysts. There is therefore no suggestion to combine Laplante, et al and Little, et al in the first instance. While Tai, et al show the existence of a hydrotalcite clay, such is in a completely different context. Tai et al. teaches an oxygen absorptive resin composition comprising a combination of a thermoplastic resin which may be a copolymer of an aromatic vinyl compound and a diene compound, a gas barrier resin which may be an ethylene vinyl alcohol (EVOH) and a metal salt catalyst. However, Tai et al. fails to teach a composition including a functional polydiene, or more particularly an *epoxy or anhydride functional polybutadiene.*

Functional polybutadienes are not disclosed by Tai et al. Rather, the reference discloses non functional diene compounds used for synthesis of the thermoplastic resin including isoprene, butadiene, 2-ethyl butadiene, and 2-butyl butadiene. No combination of Laplante, et al and Little, et and Tai et al, teach or suggest an oxygen-scavenging polymer composition including each of a) at least one ethylene vinyl alcohol copolymer; b) at least one oxidizable epoxy or anhydride functional polybutadiene; and c) at least one metal salt catalyst, and d) a clay. For these reasons it is submitted that the rejection should be withdrawn.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the examiner believes there is any matter which prevents allowance of the present application, it is requested that the

undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,

Richard S. Roberts
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(609) 921-3500
Date: June 25, 2003

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office (FAX No. 703-872-9310) on June 25, 2003.

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OFFICIAL #11 7/2/03 fc

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FAX COVER SHEET
RESPONSE TO OFFICE ACTION
(CORRECTED)

TO: Commissioner For Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

FAX NO.: 703-872-9310

FROM: Richard S. Roberts
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DATE: June 25, 2003

KINDLY DIRECT THIS COMMUNICATION TO:

EXAMINER : Sandra M. Nolan
GROUP : 1772

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